NUCLEAR DIVISION NEWS

UNION CARBIDE

a newspaper for employees of the nuclear division • union carbide corporation

Vol. 9/No. 4 February 16, 1978

PH 78-83

Dramatic drop in power use at ACES house

During early January's peak cold, a demonstration house using a novel conservation concept called the Annual Cycle Energy System (ACES) required about one-third the electric power for space heating and hot water as a similar house with conventional electric-resistance heating.

This reduction in energy requirements also virtually eliminated the twice-a-day "peaks"—in the morning and evening—that are normal for residential energy use, and which make a major demand on the power-producing capacity of electric utilities.

Joint venture

The results are based on a DOE-supported project, in which conservation performance of the ACES system, developed by ORNL scientists, is being compared with a "control" house of the same design.

The experimental houses, including one that uses solar energy for heating, are located on Alcoa Highway near Knoxville. During the week of January 9, the ACES house used only 36 percent of the electricity for space and water heating needed by the nearby control house.

The peak demand with ACES was 4 kilowatts, compared with 14 for the control house. (The power consumption of the two houses over a one-week period is shown graphically in the accompanying chart.)

Stores heat in water

ACES uses a large insulated tank of water as an energy storage bin. During the winter, heat is obtained from the water by a heat pump. Output from the pump provides hot water and warm air during the winter, simultaneously freezing water in the bin.

In the summer, the ice that was made during the winter provides air conditioning. The use of this system has been projected to save more than

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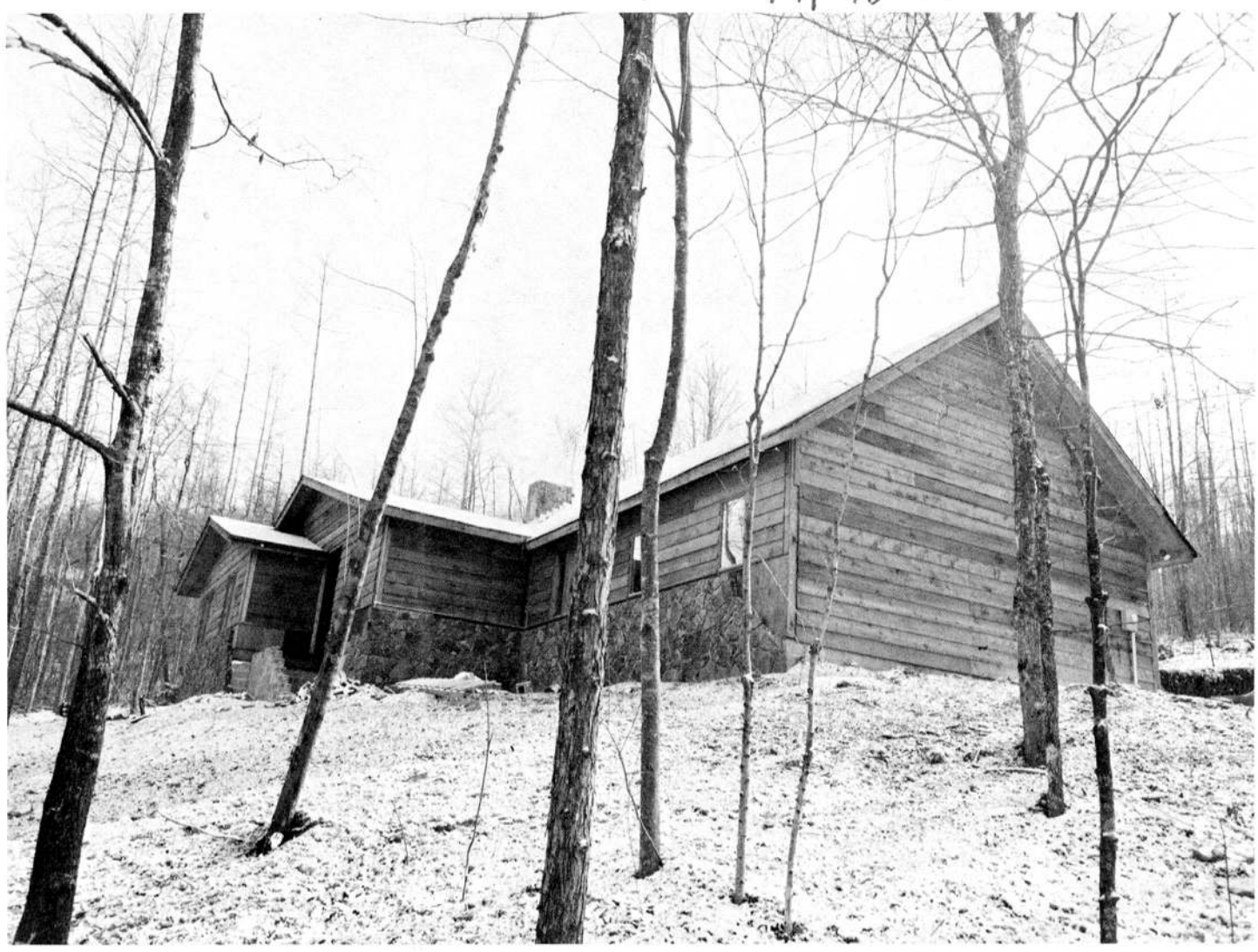


ANOTHER SOLAR HOME—The second solar home has been built in Hartland Estates, just outside Oak Ridge. It was co-designed by David L. Haynes, ORNL Experimental Engineering; and Pete Scott, who lives next door. Scott and Haynes are brothers-in-law.

Engineers design second solar home

It's near zero outside. You and your family are snug in a warm house. But, can you hear the electric meter running? It takes a little of the luxury out of being warm when you know that the kilowatts are being consumed at a rate that will make next month's utility bill resemble the national debt.

Last September, the *Nuclear Division News* featured a story on Pete Scott, a mechanical engineer at ORGDP, and his solar house in the Hartland Estates just outside Oak Ridge. Now, Scott has designed a similarly heated house for David L. Haynes, ORNL Experimental Engineering. Actually, the two engineers combined their expertise to plan and design the "newest" solar home. Haynes moved into the new home early in January and is planning completion of the solar equipment by this summer for use next winter.

Ideal cold weather

"These cold days when the temperature is well below freezing are ideal for solar-heated homes," they say. "East Tennessee's weather is almost always sunny when it is the coldest. We measured a solar supply air temperature (at Scott's house) of 156 degrees F recently, when the temperature was hovering around 10 degrees F outside. That was free heat coming from the sun. The system directs the heat from the collectors to the house."

The design of the insulated rock storage bin is such that at 160 degrees it will utilize the stored heat for at least two weeks of average winter conditions. Heat in storage comes into supply in the late evening and early morning hours when there is no sunshine around.

The Haynes system is similar to Scott's design with the exception of the capacity. The Haynes house has 35 tons of rock and 500 square feet of collector, while the Scott house has 90 tons and 1,200 square feet. Haynes' home contains a system to assist a heat pump, which is not operating at the present. He hopes to have the collectors finished and ductwork installed by late summer for full operation by the next heating season. His outside walls have six inches of insulation. Both homes have coils for circulating water throughout the rock for a hot water source. And both are designed for a worst year case.

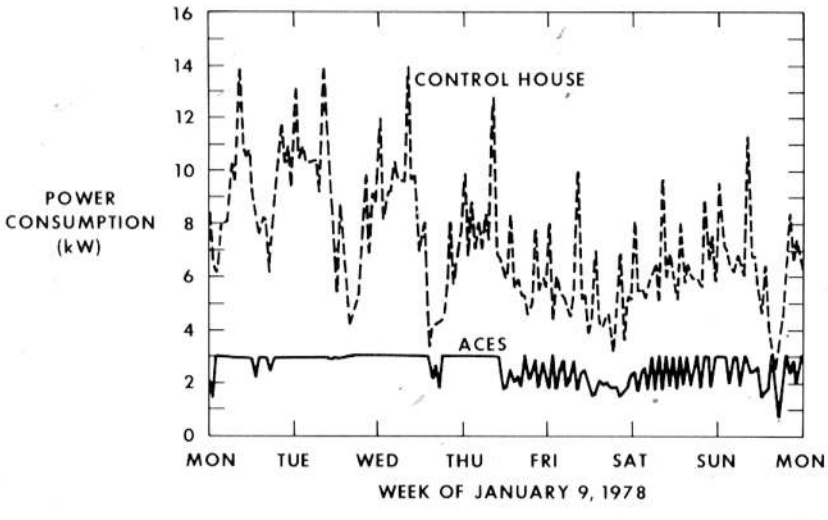
Heat collectors

Solar homes, of this design, use large integral solar collector panels of transparent plastic on their south roofs. Sunlight comes through the top layers and is absorbed into the dark surface below. Air through the collectors picks up the heat and transfers it through a duct system into the rock storage area.

"The plastic is the same that goes into jet planes' windshields," Scott says. "It's practically indestructible. My insurance agent wanted to know how a falling tree limb or a hail storm might affect it, so I tossed a huge rock up into the air and let it fall on the

(Please turn to page 8)

ACES House Uses Less Power and Eliminates Load "Peaking"



Dividend declared

The board of directors of Union Carbide has declared the corporation's 243rd consecutive divident. The amount is 70¢ a share on outstanding capital stock of the corporation, payable March 1, to stockholders on record February 3. This was the same amount paid on December 1, 1977. In 1977, the total amount paid was $2.80 a share.

anniversaries. . .

ORGDP

35 YEARS

Flanders

I. C. "Sam" Flanders, head of technology/design coordination, process buildings in the Gas Centrifuge Project Office, joined Union Carbide at the SAM Laboratories, Columbia University, February 1, 1943. He transferred to Oak Ridge when the gaseous diffusion plant construction began. Flanders, a native New Englander, is a graduate of the University of New Hampshire. He and his family live at 129 Suffolk Drive, Concord.

30 YEARS

John O. Norman, Finance and Budget; Helen M. Truett, Personnel Relations; Edward D. Wilson, Purchasing Division; Robert N. Rice, Capacity Expansion Administration; and William W. Miller, Fabrication Shop Department.

25 YEARS

Benjamin F. Johnson, Edward E. Cook and Elizabeth B. Templeton.

20 YEARS

Kenneth W. Sommerfeld.

PADUCAH

25 YEARS

William G. Higgins, Julius M. Sparkman, Darius B. Charlton, Charles W. Elliott Jr., Ward G. Taylor, Charles C. Kuppart Jr., Anna Rose Davis, Joseph T. Englert, James R. Austin, Charles H. Biggart, Robert M. Spiceland, John W. Hornsby and Roger F. Hunt.

Y-12 PLANT

30 YEARS

Betty I. Fox, Nuclear Materials Accountability; and Robert B. Bullard, Buildings, Grounds and Maintenance Shops.

25 YEARS

John W. Minchey, William C. Pullen, Henry L. Hamilton, Richard T. Bell, James M. Seivers Jr., Donald G. Scott, Stephen J. Sargent, H. L. Morgan and John C. Holt.

20 YEARS

Mary B. Hall.

ORNL

30 YEARS

Ada E. Carter, Health and Safety Research; Meyer E. Herskovitz, Instrumentation and Controls; and Ernest D. Lance, Operations.

25 YEARS

Calvin L. Julian, Paul H. Stelson, Robert L. Nelson and Richard J. Braatz.

20 YEARS

Woodrow W. Pitt Jr., Rowena O. Chester, Francis M. Rau and Charles A. Watson Jr.

WORLD PRESS FELLOWS—The 1977-78 World Press Institute Fellows visited Oak Ridge recently, touring facilities and receiving a briefing on research and development here. The journalists spend eight months in study, discussions and interviews for an open and unfettered view of America. In the front row, from left, are Peter Essoka, Cameroon; Narunart Prapanya, Thailand; Masaaki Sagami, Japan; Hebe Guimaraes, Brazil; and Nachman Shai, Israel. In the back row are Raj Sharma, Macalester College, co-sponsor of WPI; Johan Tunberger, Sweden; Barry Choi, Hong Kong; Judicate Shoo, Tanzania; Carlos Vera, Ecuador; Laurie Boeder, Macalester College; and Carlos Dell'Isola, Argentina. Union Carbide is one of the American corporations sponsoring the Institute, enabling the group to continue its unique international program.

Walton to recruiting post

Walton

Marva F. Walton has been appointed coordinator of cooperative and pre-cooperative programs with the Central Employment Office, P. C. Fourney, manager of employee relations for the Nuclear Division, has announced. She will report to Robert D. Worrell, Manager of Central Employment.

In addition to her primary responsibilities, she will also assist in technical recruiting.

Walton joined the Nuclear Division in 1967; since that time she has been a member of the research staff of ORNL's Biology Division. She holds a B. S. degree in biology from Knoxville College and an M.S. degree in biology from Atlanta University, and is a member of the Genetics Society.

Before coming to Oak Ridge, she was for five years on the staff of the Einstein Medical Center in Philadelphia. She has also worked with the Oak Ridge Associated Universities.

Marva Walton lives at 152 Alger Road, Oak Ridge. She has one daughter.

Wanted. . .

Y-12 PLANT

RIDE from Orchard Valley subdivision, near Dyllis School, to Central Portal, straight day. Dorothy Sheffield, plant phone 3-7272, home phone Oliver Springs 435-2265.

ORNL

RIDE ONLY from South Purdue, west area of Oak Ridge to North Portal, straight days. Elizabeth Montesa home phone 482-5053, plant phone 3-6032.

about people . . .

Reichle

Auerbach

David Reichle, an associate director in the Environmental Sciences Division at ORNL, has been appointed to the National Research Council's Board on Toxicology and Environmental Health Hazards.

As a board member, Reichle will be involved in directing public and private resources toward a coherent and efficient national effort on toxicology and environmental pollution; maintaining surveillance of public and private policies on a national and international scale; reviewing activities of responsible committees; and initiating and conducting studies that evaluate basic science concepts, assess state-of-the-art knowledge and determine risk to human health for the various units of the government.

Reichle joined Union Carbide in 1964 and has held his present position since 1975.

Stanley I. Auerbach, director of ORNL's Environmental Sciences Division, participated in a special congressional workshop on "Incorporating Environmental Policy in Energy Planning" on February 2. The workshop was convened at the request of John Glenn, chairman of the Senate Subcommittee on Energy, Nuclear Proliferation and Federal Services, to explore improved means of integrating energy and environmental policy, particularly in the context of future National Energy Plans.

Auerbach has been a member of the Nuclear Divison staff since 1954, and has directed the Laboratory's environmental research efforts for almost 20 years.

question box

If you have questions on company policy, write the Editor, **Nuclear Division News** (or telephone your question in, either to the editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.

Weekly vs. hourly wages

QUESTION: An employee of the bargaining unit works a maximum of 12 months before reaching the top of his job rate or pay scale; whereas a salaried employee never reaches the top of his pay scale even after 25 or 30 years. Is this not discrimination?

The hourly employee gets a negotiated wage increase every 12 months, sometimes the salaried employee goes 14 to 18 months, often even 50, before being given a wage increase. Is this not discrimination also?

I have "asked my supervisor," and his answer is "Company policy." What is the Company's policy?

ANSWER: Most hourly employees doing their work well enough to hold their jobs do reach the top of the job rate in 12 months. Hourly employees doing their work exceptionally well receive the same rate. The spread between the hourly starting rate and the hourly job rate is normally less than 5 percent.

The rate range between the starting rate and the top rate for a salary job is 50 percent. All salaried employees doing competent work should be paid the job rate, which is in the middle of the range, but getting there does take more than one year. All salaried employees do not advance to the top of the range since the upper half of the range is reserved for those employees doing their job in a superior or outstanding manner.

The normal interval between salary increases changes as economic conditions change, but in recent years has been 12 to 15 months. This interval can be shortened or lengthened depending on performance and other factors such as absenteeism, leave of absence, changes in job level, etc.

Training higher salaried

QUESTION: In a salaried technical position, is it feasible for a lower paid individual to teach and train a higher paid individual?

ANSWER: Yes, if the higher paid individual is new to the organization or job, it is entirely appropriate for a lower paid individual to provide orientation and training. It would not, of course, be appropriate for the lower paid individual to serve as the official supervisor of the higher paid individual.

Portable heaters

QUESTION: Concerning the plant bulletin of December 27, 1977, subject: Energy Conservation. Why were the portable electric heaters removed in all areas except in a Y-12 division superintendent's office?

ANSWER: Y-12 management is not aware of a portable electric heater in a division superintendent's office. If there is such a case, please advise George Oliphant, telephone 3-7288, who is Y-12's energy conservation coordinator.

Federal Property Management Guidelines, which are applicable to the facilities operated by UCC-ND, prohibit the use of portable electric heaters to supplement heating systems. However, they may be authorized for use during an emergency situation such as a shutdown of the building heating system.

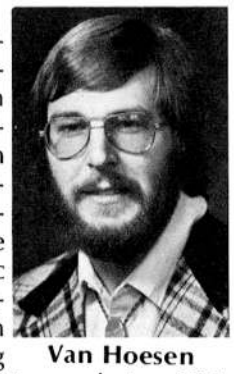
Clerical work done?

QUESTION: Why is an inspector or inspector aide being allowed to do clerical work? Why was it not put up for job bid? The job in question in Department 1312 (ORGDP) was once classified as an engineering aide but after the engineering aide terminated, the job has never been bid.

ANSWER: The assignment you refer to is not a clerical job. It is one which requires technical knowledge of inspection techniques and analysis of inspection data. The job was not bid when the prior incumbent terminated because it was determined that inspector aides/inspectors already on the payroll could perform the duties. Supervision in Department 1312 will be happy to discuss the case with you.

Van Hoeson named technical assistant

S. Dirk Van Hoesen has been named technical assistant to Chester R. Richmond, associate director for Biomedical and Environmental Sciences at ORNL. He succeeds Robert Van Hook who has returned to the Environmental Sciences Division.



Van Hoesen

Van Hoesen received his bachelor's degree in mechanical engineering from Vanderbilt University. He participated in the (former) Atomic Energy Commission's Health Physics Training Program at ORNL, and in 1974 obtained his master's degree in environmental and water resources engineering from Vanderbilt.

He then joined the AEC's Liquid Metal Fast Breeder Reactor Demonstration Plant Project in Germantown, Md. In 1975, Van Hoesen was transferred to the Public Safety Division of the Clinch River Breeder Reactor Plant Project Office in Oak Ridge, where he coordinated the environmental hearings effort and provided technical expertise in environment-related areas.

Van Hoesen joined Union Carbide last December. He and his wife, Mary Jane, reside in Ten Mile, Tenn.

Named ORGDP supervisors

PH 78-347 PH 78-157

Cameron

Mount

Two promotions have been announced in ORGDP's Fabrication and Maintenance Division. John L. Cameron and Gary E. Mount have been named maintenance supervisors.

Cameron, a native of Rutledge, spent 20 years in the U.S. Navy before joining Union Carbide in 1974. He is married to the former Margaret Tipton of Knoxville, and lives at 7108 Madeira Drive, Knoxville. The Camerons have three children, Bridget, Michael and Adrian.

Mount was born in Knoxville. Before joining Union Carbide three years ago he worked with the Mosler Safe Company. He has attended the University of Tennessee and the Fulton Vocational Electronics School. He and his wife, Audrey, live at 424 East Kingsgate Road, Knoxville. They have a daughter, Rebecca.

Winners announced. . .

STC communication contests

The East Tennessee Chapter of the Society for Technical Communication (STC) announced the winners of its annual competition at the awards banquet on January 27. The competition was open to all industrial, scientific, medical, engineering and technically oriented writers and editors whether they were members of STC or not. Publications were accepted in 13 categories—from books and brochures to technical journals and reports.

Nuclear Division entries swept more than 65 percent of the honors; including seven awards of distinction, four of excellence, four of merit and five of achievement. The following list names the Nuclear Division award winners.

DISTINCTION

- *Ichiban: Radiation Dosimetry for the Survivors of Hiroshima and Nagasaki;* credit: John Auxier, ORNL.
- *Oak Ridge;* credit: Joe Gollehon, Public Relations Department; entered by Technical Publications Department, ORNL.
- *Design Data and Safety Features of Community Nuclear Power Plants;* credit: Fred A. Heddleson, ORNL.
- *Nuclear Safety;* credit: Bill Cottrell, ORNL.
- *ORNL Review, Fall 1977;* credit: Barbara Lyon and Carolyn Krause; entered by Technical Publications.
- *Effects of Explosion-generated Shock Waves in Ducts;* entered by Technical Publications; credit: J. E. Kahn and J. P. Belk, Nuclear Division.
- *Time-dependent Fatigue of Structural Alloys: A General Assessment;* credit: L. F. Coffin Jr., A. E. Carden, *et al;* entered by Engineering Division, ORNL.

EXCELLENCE

- *Lab Newsletter, June, July, August, 1977;* credit: Jeffrey McKenna; entered by Technical Publications.
- *NRC Water-Reactor Safety-Research Program;* entered by Bill Cottrell.
- *Metallurgical Examination of LMFBR-FFM Bundle 50 Following Failure During Boiling Tests;* credit: P. A. Gnadt, R. W. Ludwig and J. W. Koger; entered by Engineering Technology Division.
- *Proceedings of the Conference on Assessing the Effects of Power Plant-Induced Mortality of Fish Populations;* credit: Webster Van Winkle, ORNL; entered by Technical Publications.

MERIT

- *Environmental, Health and Control Aspects of Coal Conversion: An Information Overview;* credit: Helen Braunstein, Helen Pfuderer and Emily Copenhaven; entered by Technical Publications.
- *Career Opportunities;* credit: Joe W. Gollehon; entered by Technical Publications.
- *The Maryland Power Plant-Siting Project: An Application of the ORNL-Land Use Screening Procedure;* credit: Jerome E. Dobson.
- *Test of 6-inch-thick Pressure Vessels, Series 4: Intermediate Test Vessels V-5 and V-9 with Inside Nozzle Corner Cracks;* credit: J. G. Merkle, G. C. Robinson, *et al.*

ACHIEVEMENT

- *Mathematics and Statistics Research Department* (Computer Sciences Division at ORNL); credit: Joe W. Gollehon; entered by Technical Publications.
- *Energy Division: Annual Progress Report;* credit: Technical Publications; entered by Energy Divison.
- *Prestressed Concrete Reactor Vessel Thermal Cylinder Model Study;* credit: J. P. Callahan, D. A. Canonico, *et al.*
- *Stress Analysis of Cylindrical Pressure Vessels with Closely Spaced Nozzles by the Finite-Element Method;* credit: J. D. W. Tso, J. W. Bryson, *et al.*
- *Technology Assessment of Modular Integrated Utility Systems;* credit: S. B. Ahmed, W. J. Boegly Jr., *et al.*

PH 78-569

PLANT APPEARANCE COMMITTEE—The Plant Appearance Committee at ORGDP met recently to provide a year-round program to keep good housekeeping practices more than seasonal efforts. From left are Larry A. Dean, Maintenance; Robert W. Levin, Technical Services; Chris S. Travaglini, Auditing Division; Ernie C. Evans, Separation Systems; J. Frank Jamison, Finance, Materials and Services Division; Charles L. Allen, Computer Sciences; A. J. "Gus" Legeay, Operations Division; and Frank Strang, Barrier Manufacturing. Robert Merriman, Gaseous Diffusion Development, is not pictured.

Year-round cleanliness campaign

A new plant appearance program is underway at ORGDP that is a little different than those of past years. J. Frank Jamison, division superintendent for Finance, Materials and Services, said, "The major difference is that our program provides for continued activities on a year-round basis. Past programs have placed emphasis over a very short time. This program will continually highlight activities and actions."

Jamison, who is serving as chairman and administrative coordinator of the program, said ORGDP's safety record can be improved and that "management hopes all employees will take the program objectives seriously. With a continuous program, we will have not only a cleaner plant, but a safer plant."

Two-month inspections

ORGDP has been divided into eight geographic areas, each having a division superintendent serving as chairman of a plant appearance coordinating team for his area. Each chairman will select a maximum of five area coordinators who will be responsible for noting housekeeping deficiencies and notifying appropriate division personnel of the situation for corrective action. This will be accomplished by formal monthly inspections and day-to-day observation. The area chairmen will conduct formal inspections at least once every two months.

Jamison said an audit committee of about eight people, including the plant manager and deputy plant manager, will perform a final walkthough inspection at the end of the year.

Will award plaques

Awards will be presented to two areas every two months for recognition as having the best appearance. At the end of the year, the three best kept geographic areas will be awarded a plaque for outstanding performance. All geographic areas will be rated.

"We know that clean areas contribute to safety," Jamison said. "Our goal is not to disrupt the present construction programs. We want to dispose of excess property and free up storage space for other uses. A maximum effort by our employees can accomplish these rather simple goals and, at the same time, improve safety conditions for everyone."

Gearing up for WATT-ec

17726

REGISTRATION COMMITTEE—From left are Margaret West and Jayne Adkisson, Nuclear Division; and Sandra Davenport, Tennessee Valley Authority.

WATTec-78, an annual energy conference and exhibition held during Engineers' Week at the Hyatt Regency Knoxville, will be kicked off Thursday, February 23, by society-sponsored technical programs.

Seventeen Nuclear Division employees will be participating in the following energy sessions: Fire Protection and Energy Conservation, Nuclear R&D in the Tennessee Valley (two sessions), Management of Electrical Loads, Testing Technology for Nuclear Applications, Quality Impact on Energy, Issues in Energy, Issues in Energy and Education, Energy Conservation in Housing, Stainless/Ferritic Steel Transition Joints, and Solar Energy Materials and Solutions.

Ten members of the 17-person planning committee are Nuclear Division employees. They are G. R. Jasny, WATTec general charrman and director of engineering for the Nuclear Division; executive committee members G. G. Fee, director of the Gas Centrifuge Project Office, and F. S. Patton, manager of Design Engineering; Robert Stepp, assistant to the chairman and an Engineering Division employee at ORGDP; F. D. Mundt, secretary-treasurer and in Quality Assurance at ORGDP; P. F. Boyer, exhibits, is in Y-12's Numerical Control Engineering; E. D. Aebischer, information activities, is in the Public Relations Department; J. E. Corum, arrangements coordinator, Engineering at ORNL; M. J. Adkisson, registration, Health and Safety Research Division; and J. E. Beavers, Engineers' Week Liaison, Engineering at Y-12.

Named to ORGDP information post

Ira N. Kaplan of the Nuclear Division's Public Relations Department has been named information officer for programs conducted at the Oak Ridge Gaseous Diffusion Plant site. Kaplan, who joined the Nuclear Division about a year ago, had been public affairs officer for the Office of Waste Isolation.

His principal responsibility at ORGDP will be to provide public relations assistance in connection with the uranium enrichment programs.

A native of Baltimore, Md., Kaplan received his bachelor's and master's degrees in broadcasting from the University of Alabama. He worked with radio stations for several years and was news director of WFIR radio in Roanoke, Va., prior to 1972 when he was named senior public relations representative for Virginia Electric and Power Company (Vepco).

While at Vepco he was responsible for public relations in the areas of power station engineering and construction, power supply and production operations, licensing, and fuel resources.

His office will be in Building K-1001-A; telephone 3-9724.

safety scoreboard

Time worked without a lost-time accident through February 9:

Paducah	202 Days	2,529,000 Man-Hours
ORGDP	9 Days	405,000 Man-Hours
Y-12 Plant	22 Days	683,000 Man-Hours
ORNL	25 Days	556,305 Man-Hours

wanted...

ORNL

RIDER WANTED from Karns/Ball Camp area, Knoxville, to any portal, 8-4:30. Neil Griffith, plant phone 3-6422, home phone 690-1876.

RIDE ONLY from North Purdue, Downtown Shopping District, Oak Ridge, to East Portal, straight days. Gerri Cox, plant phone 3-6665, home phone 483-6770.

RIDER WANTED from Landmark Subdivision, Country Club Apartments, Middlebrook Pike, Gulf Park Subdivision, or Cedar Bluff Road areas, Knoxville, to East Portal, 8:15-4:45. Althea Tate, plant phone 3-1822, home phone 693-9235.

JOIN CAR POOL from area of Newridge Avenue and West Outer Drive, Oak Ridge, to West Portal, 8:15-4:45. Dennis Parzyck, plant phone 3-1877, home phone 482-4556.

RIDE with non-smokers from Madison Lane near hospital, Oak Ridge, to East Portal, 8-4:30. Nell Dunham, plant phone 3-6664, home phone 483-5790.

RIDERS FOR VAN POOL from West Knoxville area to North, South, or West Portal. Mike Caldwell, plant phone 3-1331, home phone 690-8573.

JOIN CAR POOL from Burnham Woods area, Oak Ridge, preferably to East Portal, 8:00 or 8:15 shift. Eileen Schlatter, plant phone 3-1369, home phone 483-7527.

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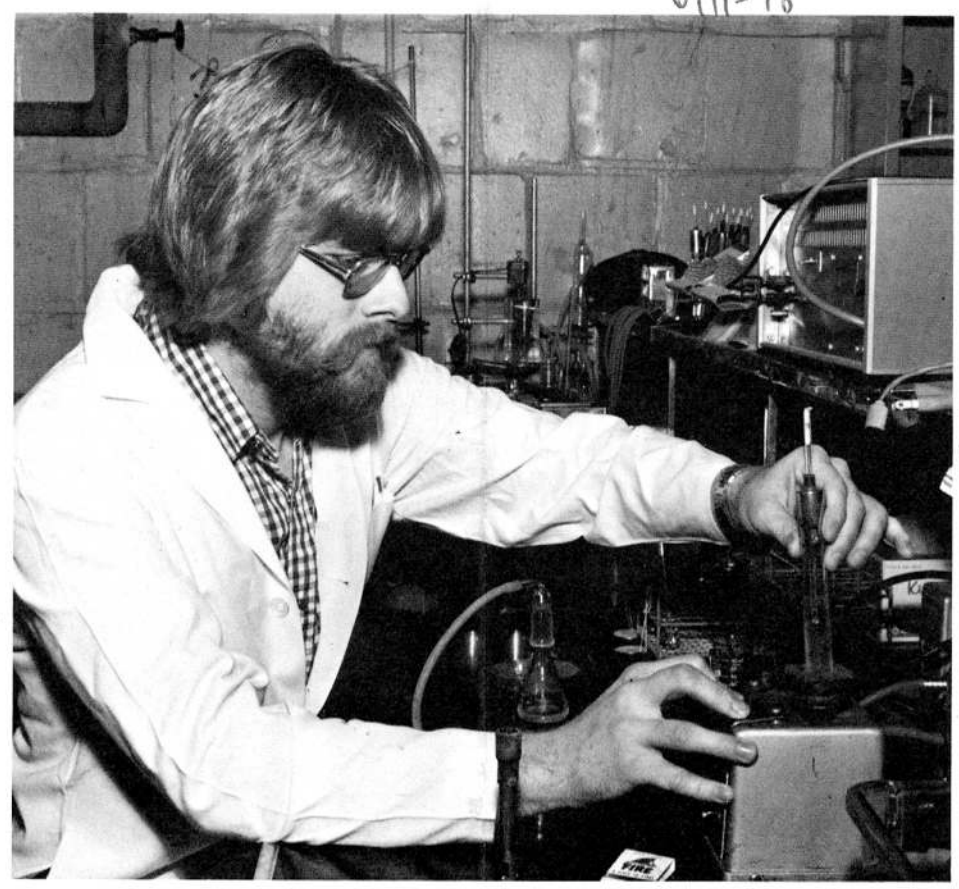

Rick Wobbe, Centre College, is in the Biology Division studying the effects of ionizing radiation on the cell division machinery of the **Escherichia coli** *bacterium. Wobbe and Lisa Trimble, pictured below, are two of the 14 undergraduate students participating in a four-month research and study program at ORNL sponsored by DOE and the Southern College/University Union.*

Students participate in science semester at the Laboratory

Fourteen undergraduate students from eight southern educational institutions which form the Southern College University Union (SCUU) are participating in a four-month program of research and study at ORNL. The "Science Semester," cosponsored by SCUU and the Department of Energy, provides junior and senior students opportunitites to carry out independent research in their individual areas of interest under the guidance of senior members of the ORNL staff. In addition to work on their research assignment, students attend weekly colloquia and participate in a three-day course on radioactive isotope techniques conducted by the Special Training Division of the Oak Ridge Associated Universities.

SCUU participating institutions are Birmingham-Southern College, Alabama; Centenary College, Shreveport, La.; Centre College, Danville, Ky; Fisk and Vanderbilt Universities, Nashville; Millsaps College, Jackson, Miss.; Southwestern University, Memphis; and University of The South, Sewanee.

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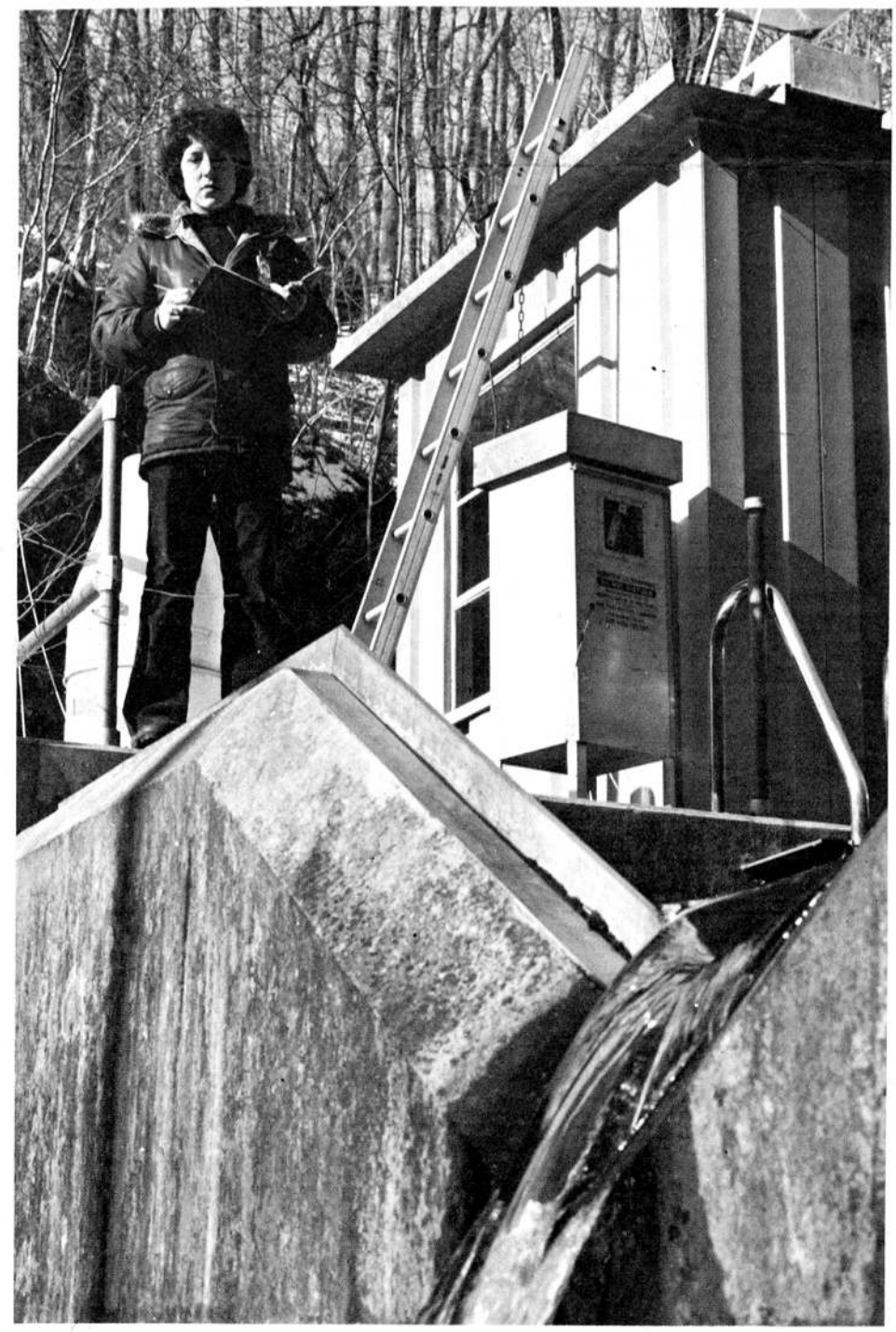


Lisa Trimble, University of the South, records information on stream organisms to determine if phosphorus is a limiting factor on stream ecosystems. Trimble is working in the Environmental Sciences Division.

retirements...

N78-9

C. W. "Bill" Mason
Y-12 Process Maintenance
33 years service

N78-8

Elbert Scott
Y-12 Guard Department
33 years service

PH 78-364

Albert H. Malone
ORGDP Separation Systems
25 years service

PH 78-474

James R. Helton
ORGDP Technical Services
29 years service

PH 78-472

Samuel J. Senatore
ORGDP Engineering
32 years service

PH 78-473

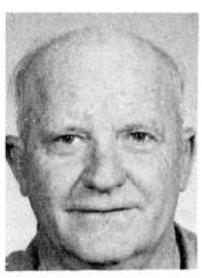
George H. Hudson
ORGDP Maintenance
32 years service

OS 79-78

John A. Ellis
ORNL Finance and Materials
31 years service

2930-72

Ernie P. Griggs
ORNL Metals and Ceramics
30 years service



George W. Faughn
Process Maintenance
Paducah
26 years service

Musie G. Naive
Paducah
Senior Secretary
33 years service

William T. Naive Jr.
Office Services
Paducah
33 years service

John L. Clark
Paducah Assistant Plant Manager
34 years service

recreationotes . . .

Carbide bowling. . .

Y-12 C League. . .

The Rounders lead by half a point in the "C" League, during the second week of bowling. Robert Carmacks' 716 handicap series still holds the season high. Charles Baxter moved on the boards with a 257 handicap game.

Carbide Family. . .

The first half came to a close in the Family Mixed League with the Oops in first place over the Challengers by only half a point. Harold Zang's 552 and Edith Duckworth's 528 scratch series won the weekly highs for men and women.

Y-12 Classic. . .

The Classic League saw a lot of action last week beginning with a tie for first place between the Ridgers and the Has Beens. Frank Adams fired a 246 scratch game, while Dick Huber rolled a 599 handicap series. Walt Sherrod won the weekly high for handicap series with a 655.

Y-12 Mixed...

The Wood Cutters lead the U.C.C. Mixed League by one point over the Lickety Splits. The Hit & Misses and the Safe Guards are in a close third and fourth.

K-25 Tuesday. . .

The City Slickers can't be stopped in the K-25 Tuesday Night League. In last week's action, J. A. Kobelski rolled a 200/250 game with a 555/645 series. J. K. Phillips fired the highs this week with a 253/281 game with a 600/684 series.

ORGDP Women's. . .

Mary Foley, of the Uptowners, rolled the high scratch game of 207 in the ORGDP Women's League last week. The Payoffs lead the league over the Uptowners. Elaine Griffies fired a 528 to win high scratch series.

Paducah Volleyball

The unbeatable, undefeated Carbide volleyball netters are approaching an end-of-season tournament on February 23 and 24 at the Jetton Junior High gym. The Carbiders are a heavy favorite in the contest and all fans and supporters are urged to back the netmen in their "high-handed" endeavors.

holiday coming. . .

Monday, February 20, is an official holiday for Nuclear Division employees.

It was declared a holiday recently, combining celebrations for the birthdays of Abraham Lincoln and George Washington.

No employee is required to be at work unless his/her presence is necessary for continuous operations or plant security.

Carbide Shifters. . .

The 2 + 2 are leading the Carbide Shifters League over the B.T. Express. Steve Martin holds the season high scratch game for men with a 226. Bobbie Loving holds the same record for women with a 209.

ORNL Ladies. . .

The HP-Ettes are tied with Mousechasers in the ORNL Ladies League. Pat Hunsicker, of the Mousechasers, rolled a 200/235 handicap game to win the weekly highs.

ORNL C...

The Remkeys control the lead in the ORNL "C" League over the Alley Rads. Ray Walker, of the Damagers, rolled the high handicap series with 685 for this week's high.

ORNL A...

The limits raised their lead over the Zots in the ORNL A League. Last week, Carlton, of the ORAU's rolled the high handicap series of 671. C. Thomas, of the Half Frames, won high handicap game rolling a 242.

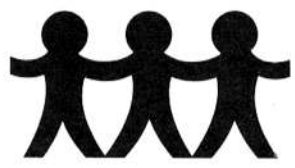
Family Mixed. . .

The Bowlderdash have taken an early lead in the second half with eight straight wins. One-half game behind them are the Alley Cats in second place. Individual honors go to Pat Chesney who bowled a 219, which is 103 pins over her average, to help her claim the high handicap series spot for women; and to Bob Stockdale who, with the aid of a 195 game, took high handicap series for men.

K-25 Wednesday. . .

The Planners lead by ten points over the Hi-Rollers in the Wednesday Night League. Bill Muenzer, of the Hi-Rollers, won the weekly prizes rolling a 251 handicap game with a 666 handicap series.

it's working



people need people

SATIN SOUNDS—Union Carbide wives and employees make up this 'Satin Sounds' quartet of the Atomic City Sweet Adelines. The chorus will be heard March 3 and 4 at 8 p.m. at the Oak Ridge Playhouse, featuring the unique barbershop music. The quartet will compete in April with other quartets from this region. From left are Louise Ryan, bass; Billie Wylie, baritone; Joan Isham, tenor; and Jackie Hitch, lead.

Paducah dance marks Valentine Day late

Paducah Carbiders can escort their valentines to the Carbide Sweetheart Dance on February 24 at the St. Mary High School Common from 9 p.m. to 1 a.m. "Sawmill" will be the featured band and dress will be semiformal. The doors will open at 8 p.m. and door prizes will be awarded. Tickets are now on sale and the price is $7. Guest tickets will go on sale February 23, if available. Snacks will not be provided at this dance and individual take home badges will be required for admission, with no exceptions.

Tickets can be obtained from the following representatives: Iris Norman, C-720, Compressor Shop; Jeff Vandeven, C-720, Inspection; Brenda Stokes, C-710, Lab; Curtis Chenault, C-400; Marietta Lambert, C-720; Carol Page, C-720; Jim Freeman, C-720, Fab Shop; Charlene Riley, C-200; Darlene McPherson, C-100; Doris Wilson, C-720, Converter Shop; Kathy Smith, C-300; W. E. Sykes, C-335 and E. N. Cothran, C-720 Mezzanine.

Volleyball leagues. . .

The Volleyball League is back in swing after the holidays and a few days off because of weather.

League standings follow:

ATOMIC LEAGUE

Team	W	L
Diggers 4	24	5
Taxi Squad	29	6
Diggers 3	27	6
Quarks	15	18
Old Men	6	24
Head Hunters	0	45

CARBON LEAGUE

D Shift	19	8
Fesnakes	14	7
Mixed Nuts	15	6
Players	15	12
Net Profits	14	7
The Flockers	10	5
Odds & Ends	12	9
The Set Ups	18	12
The Group	17	13
Volettes	17	10
Spiders	20	16
Tom's Turkeys	16	20
The High Timers	11	16
Jedi Knights	7	11
Gag-Genes	13	23
The Bombers	5	16
Dread Red Devils	3	15
Streakers	6	15
Wall Bangers	3	12

NUCLEAR LEAGUE

Skinks	23	1
Pogos	26	1
Over-the-hill Gang	30	3
Fed's	17	12
Gauss House Gang	19	14
Artie's Army	23	10
Rad-Fizz	16	11
Orange Team	19	11
Ball Busters	10	11
Bio Bumpers	14	19
Maxwell Demons	12	18
Electric Bananas	7	14
Sloths	6	21
Sewer Trout	8	22
Bawlers	10	23
Abends	7	20
No-Names	5	25
Net Pickers	2	21

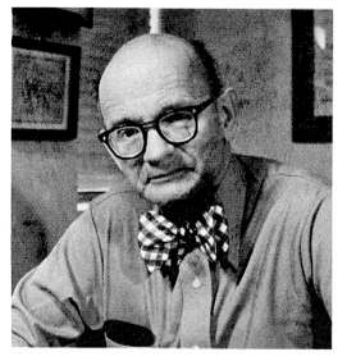
safe thinking . . .

Editor's Note — Don't be selfish with your safety tips! Call the **Nuclear Division News** *Office, and tell us your stories or hints on safety.*

CLOTHESPINS—Can contribute to safety in traffic. Toll tickets, written directions and instructions, some kinds of identification can be clipped on the sun visor, eliminating the need to divert attention from driving while searching for such items.

Medicine Chest...

Overweight; High blood pressure



by T. A. Lincoln, M.D.

(Editor's Note: Dr. Lincoln alternates his regular column with "Medicine Chest," where he answers questions from employees concerning health matters. Questions are handled in strict confidence, as they are handled in our "Question Box." Address your question to "Medicine Chest," **Nuclear Division News,** *Building 9704-2, Mail Stop 20, or call the news editor in your plant.)*

Approximately 30 percent of men and 40 percent of women aged 40 to 59 have a systolic blood pressure of 160 millimeters of mercury (Hg) or greater. In addition, they may have a diastolic blood pressure of 95 millimeters mercury or greater. (Stated simply, their blood pressures are equal to or greater than 160/95.) Coincidentally, about 30 percent of men and 40 percent of women over the age of 30 are 20 percent or more above the desirable weights which appear in the Metropolitan Life Insurance Company tables. Are these two facts related and, if so, how?

First, one has to define "overweight" more precisely. A person may be overweight because of overdeveloped musculature or even bony structure. Obesity and overweight are not always the same. However, from a practical standpoint, only a small number of athletes, weight lifters and workers who must perform continuous heavy physical tasks are overweight because of overdeveloped muscles or bones. Most people are overweight because they are just plain fat!

Women fatter than men

After age nine, fat comprises a greater percentage of the total body weight in women than in men. The percentage increases at a more rapid rate for men than women as they get older, but at all ages women are on the average fatter than men.

The correlation of obesity and high blood pressure is greatest in the age group 30 to 39 in both males and females; thereafter, it is greater for women than for men. The pressures are the highest in those who also have a family history of high blood pressure and in those who are extremely obese. A look at the reverse correlation, high blood pressure with obesity, reveals that 20 to 35 percent of all hypertensives are at least 20 percent overweight.

In the famous Framingham, Mass., heart disease study, 5,127 men and women aged 30 to 62 years at the time of the initial examination were followed for more than 12 years. The risk of eventually developing hypertension in the group who were 20 percent or more overweight at the time of the initial examination was eight times greater than in the group who were 10 percent underweight.

A number of studies have shown that weight reduction lowers blood pressure in many obese hypertensive patients. A recent study conducted in the Chaim Sheba Medical Center at Tel-Aviv University Medical School in Israel found that weight control is often all that is necessary to lower blood pressure to acceptable levels.

Sodium intake

Dr. Lewis K. Dahl, Brookhaven National Laboratory, believed that the reduction in blood pressure was due to the decreased intake of sodium. Even though obese people carefully avoid salt (sodium chloride), they get too much natural sodium in the extra food they eat. Almost all processed foods are heavily salted. Milk and milk products have a naturally high sodium content.

In the Israeli study, participants were encouraged to freely use salty foods as a part of their weight reduction program. In spite of equal or higher sodium intake than in their normal diets, most of the Israeli patients who achieved ideal or nearly ideal weight also experienced appreciable decreases in their blood pressures. Using weight control alone, 53 out of 81 were able to achieve normal blood pressure levels. They lost an average of 21 pounds over a two to three month period on about a 1,000 calorie diet. In those who had been 11 to 20 percent overweight, the average drop in blood pressure was 26 millimeters mercury systolic and 20 millimeters mercury diastolic—an impressive drop!

High blood pressure, like diabetes, appears to have a strong genetic component. If the genetic vulnerability is there, becoming overweight brings on the high blood pressure. When the weight is returned to normal, many patients experience a return to near normal blood pressures. Obviously, some do not. Those whose blood pressures remain high need additional hypertensive medication.

Medication vs. nature

It is unfortunate that the "easy" way of taking antihypertensive medication and diuretics has been allowed to replace nature's way. Many people, of course, find weight control extremely difficult. They would rather endure the unpleasant and sometimes dangerous side effects of their medicine than make a real effort at weight control. It may be necessary to combine antihypertensive medication with diet at the beginning of the treatment program, but as the weight comes off, the medicine can be reduced and sometimes eliminated.

In some people, obesity brings on accelerated vascular disease because it causes high blood pressure. Those overweight individuals with normal blood pressure and cholesterol seem to have relatively little increase in cardiovascular disease.

It's an old story. The best way is often the toughest. They easy way, antihypertensive medication alone, is expensive, unpredictable and often associated with unpleasant side effects.

Chosen Union Carbide scholar

James E. Rosser, son of Mr. and Mrs. Howard E. Rosser, 106 West Farragut Road, Oak Ridge, has been selected to attend a Washington Workshops Congressional Seminar, March 5-12, as a Union Carbide Scholar.

Rosser, a senior at Oak Ridge High School, was recommended for the honor by the school faculty. His nomination was supported by the Nuclear Division.

N78-1

The curriculum for the seminar will include classes, discussions with members of Congress, attendance at House and Senate chamber sessions and committee meetings, and talks by Cabinet members and other national leaders, both in and out of government. Participants are housed at Mount Vernon College, where most of the seminar sessions are conducted.

Rosser is a member of the National Honor Society and was locally nominated for the National Honor Society Scholarship. He has for three years been a delegate to the North American Model United Nations, and served as chairman of this year's delegation. In 1976-77 he served on the Junior Key Committee at ORHS.

He is chairman of the ORHS Student Council Permanent Concessions and a member of the ORHS Gymnastics and International Relations Clubs. As a junior, he was a member of the Student Council Scholarship Committee. Rosser will enter the University of Tennessee this fall, majoring in finance.

The full cost of Rosser's participation in the Washington Workshops program as a Union Carbide Scholar will be defrayed by Union Carbide Corporation.

James E. Rosser

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patent granted. . .

To Ralph A. Potter and James L. Scott, both of ORNL, for "(U,Zr)N Alloy Having Enhanced Thermal Stability."

Talent show set for cancer fund in Roane County

Many Union Carbide employees are active in planning the Fourth Annual Roane County Talent Show, set for March 31 at the Roane State Community College. Margaret Stewart, ORGDP Engineering, is chairman of the event which features a variety of pop, country western, patriotic, gospel and barbershop music, a square dance exhibition with clog steps, pantomime, magic and comedy acts.

Proceeds for the affair will go to the American Cancer Society. Tickets are $1.50 in advance, $2 at the door.

division death. . .

George D. Bowen, an instrument mechanic in ORGDP's Fabrication and Maintenance Division, died February 7, at his Route 17, Knoxville home.

Mr. Bowen

A native of Alabama, he joined Union Carbide in 1946. He was a World War II veteran.

Survivors include his wife, Dessie Turnbill Bowen; son, Rudolph; step-son, Joe Williams; a brother, D. C. Bowen; two sisters; and one grandchild.

Funeral services were held at the Kyker Funeral Home, Kingston, and graveside rites were held in Hartsell, Ala.

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Second solar home

(Continued from page 1)

roof to show that the panels were unbreakable. He approved my house in short order."

And what if snow piles up on the roof and stays to keep the sunshine from penetrating into the collectors? That just doesn't happen, Scott says. When the sun does come out, the snow melts just enough to get slick and slides right off the roof. At the present, he points out, the snow stops at the gutters, but the two engineers are planning a perforated plate gutter guard for the snow, where it will slide over the gutters onto the ground.

HOUSE THAT SCOTT BUILT—The solar home featured in last fall's Nuclear Division News was built by Pete Scott, ORGDP Engineering. It is seen after one of the recent snows with its solar panels exposed to the southern skies for optimum heat. How does it work? "Fine," Scott says.

Pays for itself

The cost for the solar system in Haynes' home ran around $5,000, compared to $8,000 for Scott's home. That does not include engineering and a lot of labor both men put into the systems. Both will be paid for in a short span of years due to savings in heat bills.

The rock storage heat is not used in Scott's home just now because too much heat is required to raise the rock temperature to useful levels. June is the target date for collecting heat in the storage area; hot water from the coils in the rock will be available then; and full use is anticipated next winter for 100 percent of the house and hot water heating.

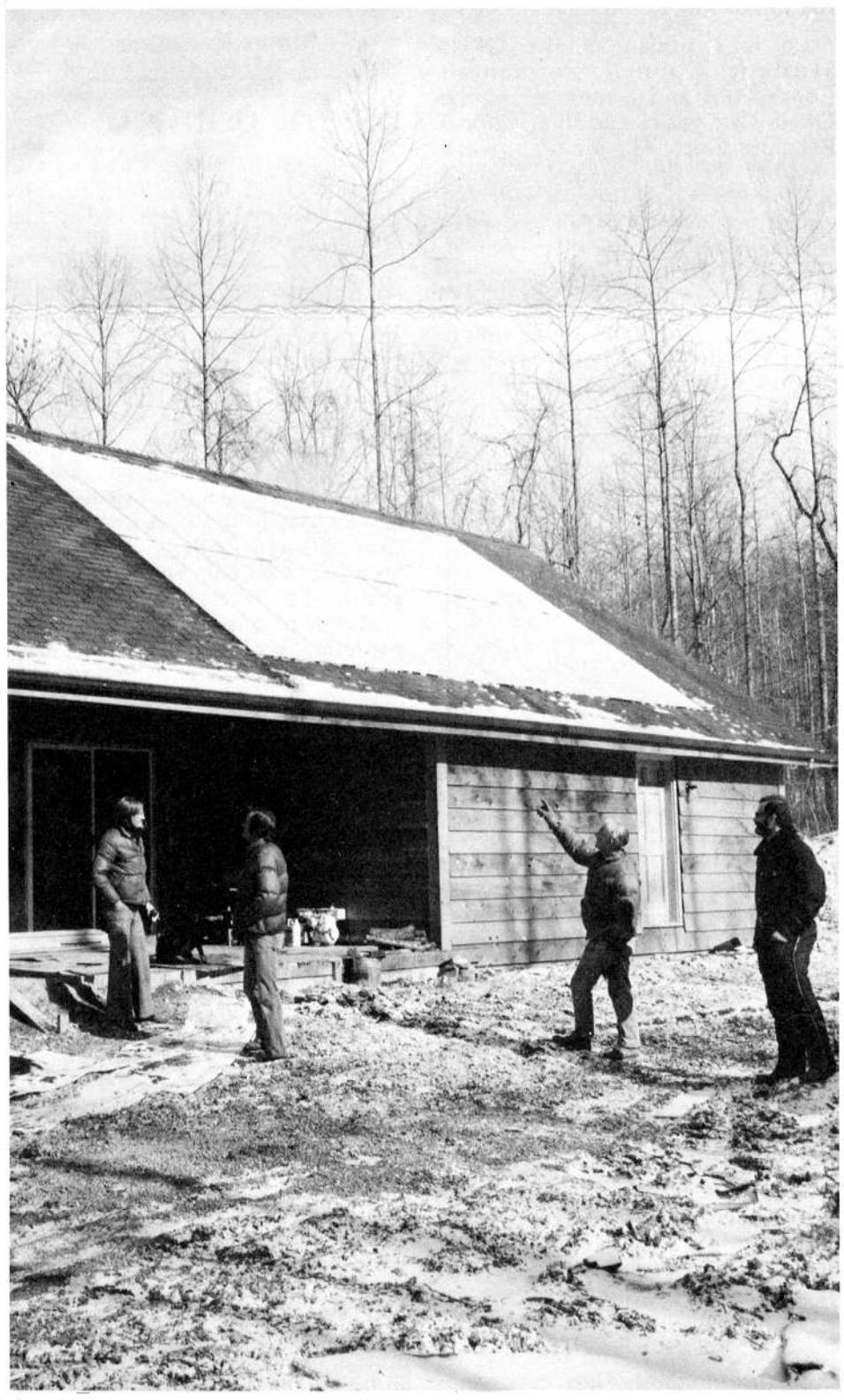
Scott, his wife and daughter, have occupied their home since last February, enjoying the rolling acreage and the magnificient view of the Cumberlands to the north. "In the future we will enjoy ample heat without worrying about coal strikes, diminishing energy supplies and high heating bills. That's why we designed our homes in this fashion," the engineers agree.

The Scott and Haynes homes are on adjacent lots, but that doesn't mean too much to city-dwellers because of the size of the lots. The entire subdivision has "country" sized lots where one can spread out a little and enjoy the privacy and peace of rural living.

Both homes are also designed for future development, with space available for further finishing.

Scott and Haynes share more in common than similarly designed homes. They are married to sisters...Scott to Patricia and Haynes to Nancy. The wives are former Harts, daughters of Len Hart, a retired Y-12er, and Naomi, a secretary in Y-12's Maintenance Division.

So the next time the spinning of your electric meter bothers you, remember the brothers-in-law Scott and Haynes. They don't worry about it.



INSPECT THEIR WORKS—David Haynes, Len M. Hart, Len E. Hart and Pete Scott inspect the solar panels as they silently, efficiently collect heat for storage in Haynes' new home. The new house is the second solar home in the subdivision, both engineered by Scott and Haynes.

Dramatic drop

(Continued from page 1)

half of the energy normally used for heating and cooling residential and commercial buildings.

The houses are connected to a computer system which records internal and external temperatures, as well as energy use and the operating efficiency of equipment. Although neither ACES nor the control house has permanent residents, each is equipped with devices which are pre-set to give off heat and release hot water, simulating occupancy by a family of four.

Low peak demand

During the week of January 9, outside temperatures averaged -7.5 degrees C (18 degrees F) with a low of -17 degrees C (1 degree F). The 71 percent reduction in peak at the ACES house occurred at 8 a.m. on the coldest mornings, when demand on the Tennessee Valley Authority power system was near its maximum.

Two features of ACES account for its low peak demand. The coefficient of performance (COP) of the ACES heat pump remained at 2.8 regardless of outside weather conditions. Also, the system is designed to produce a large portion of the 8 a.m. hot water requirements during the preceeding night, while the control house had to draw its full electric load for hot water at the time of use.